

## **REMARKS**

The Applicants appreciate the thoroughness with which the subject application has been examined. By this amendment, changes have been made in the specification and claims as indicated above to overcome the Examiner's rejections and objections and more concisely claim and describe the present invention. The Examiner's allowance of all pending claims is earnestly solicited.

### **MATTERS RELATED TO THE SPECIFICATION**

The Applicants have identified several typographical informalities in the specification and propose to correct them as indicated above in the marked-up specification paragraphs. No new matter has been introduced into the specification.

### **MATTERS RELATED TO THE DRAWINGS**

It appears that the Examiner's objection to the drawings under C.F. R. 1.83(a) is based on claim 11. Claim 11 has been amended as set forth above. The Examiner is also invited to review Figure 14, illustrating voids formed in the regions 150 underlying the inductor 120. See also paragraph [0034]. Based on the revisions to claim 11, it is respectfully submitted that the drawing objection has been overcome.

### **MATTERS RELATED TO THE CLAIMS**

Within the first claim set (claims 1-9), claims 1 and 4-8 have been rejected under Section 102(b) as anticipated by Park (6,153,489). Claims 2 and 3 stand rejected under Section 103(a) as unpatentable over Park in view of Beaussart (6,429,504). Claim 9 has been rejected under Section 103(a) as unpatentable over Park in view of Swanson (6,503,838).

To further distinguish the invention over the art of record, the Applicants have revised the fourth paragraph of claim 1 to "wherein the semiconductor substrate defines a void therein in at least a portion of a substrate region underlying the continuous conductor" and have added, "a tungsten plug extending from the continuous conductor to an active region of the substrate." Support for the tungsten plug addition can be found in paragraph [0018] of the specification.

Park discloses a trench 19 in Figure 2B that is filled with porous silicon. Park does not disclose, fairly suggest or infer "a void therein in at least a portion of a substrate region

underlying the continuous conductor” nor “a tungsten plug extending from the continuous conductor to an active region of the substrate.”

Claims 2-9 each further distinguishes the invention by defining a novel combination of additional features. It is therefore respectfully submitted that dependent claims 2-9 depending from claim 1 are allowable over the cited art.

Additionally, there is no teaching, suggestion or motivation for combining Park and Beaussart under Section 103(a). Beaussart discloses an “upper and lower spiral inductor sections” with “a plurality of electrically conductive vias interconnect[ing] adjacent concentric loop segments. Park discloses only a single inductor spiral section. Further, the combination does not disclose conductive vias connecting inductor terminal ends to active regions (claim 2) nor a material of the continuous conductor comprising aluminum (claim 3).

Also, there is no teaching, suggestion or motivation expressed in either Park or Swanson for combining the two references.

Within the second set of claims (claims 10-16) claims 10-12 and 16 have been rejected under Section 102(b) as anticipated by Park. Claims 13-15 stand rejected under Section 103(a) as unpatentable over Park in view of Beaussart.

To further distinguish the invention over the cited art, the fourth paragraph of independent claim 10 has been amended to “a plurality of conductive interconnect layers alternating with a plurality of dielectric layers for connecting to active regions.” In the last paragraph “aperture” has been deleted and “first void” substituted therefor.

Park discloses the trench 19 filled with porous silicon. Park does not disclose or fairly suggest “wherein the semiconductor substrate defines a first void therein in a region underlying the continuous conductor” or “a plurality of conductive interconnect layers alternating with a plurality of dielectric layers for connecting to active regions.”

Claims 11-15 each further distinguishes the invention by defining a novel combination of additional features. It is therefore respectfully submitted that dependent claims 11-15 depending from claim 10 are allowable over the cited art.

There is no teaching, suggestion or motivation for combining Park and Beaussart. Beaussart discloses an “upper and lower spiral inductor sections” with “a plurality of electrically conductive vias interconnect[ing] adjacent concentric loop segments. Park discloses only a single inductor spiral section. Further, the combination does not disclose conductive vias connecting

inductor terminal ends to active regions (claim 13) or “the first conductive via electrically connect[ing] the first terminal end to one of the plurality of active regions and the second conductive via electrically connect[ing] the second terminal end to one of the conductive interconnect layers” (claim 15).

Within the third set of claims (claims 17-20) claims 17-19 stand rejected under Section 103(a) as unpatentable over Park in view of Beaussart. Claim 20 has been rejected under Section 103(a) as unpatentable over Park in view of Beaussart and Swanson.

To further distinguish the invention over the cited art, the fifth paragraph of independent claim 17 has been amended to “wherein the semiconductor substrate defines a void underlying at least a portion of the conductor lines” and the reference to “tungsten plugs” added in paragraphs three and four. Paragraph [0018] provides specification support for the tungsten plugs.

Neither Park nor Beaussart discloses or suggests the void in the substrate and the combination is not permitted as discussed above. Also, neither depicts active regions in the substrate electrically connected to terminal ends of the inductor through tungsten plugs as claimed by the Applicants in claim 17.

Dependent claims 18-20 further distinguish the invention by defining a novel combination of additional features. It is therefore respectfully submitted that dependent claims 18-20 depending from claim 17 are allowable over the cited art.

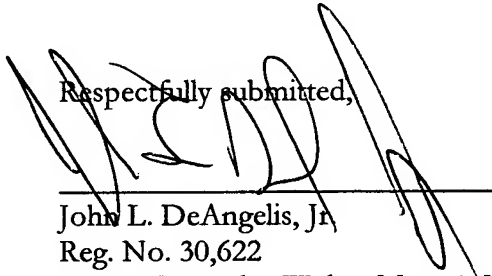
Further, there is no disclosure, suggestion or motivation in any of the Park, Beaussart or Swanson references that permits their combination as Park and Swanson disclose a single layer inductor and Beaussart discloses a dual layer inductor. It is not seen how Beaussart’s conductive vias that interconnect the upper and lower sections of his inductor have any application to an inductor comprising only a single conductive layer as in Park and Swanson.

The Applicants have complied with all of the points raised in the Office Action and it is believed that the remaining claims in the application, i.e., claims 1-20, are now in condition for allowance. In view of the foregoing amendments and discussion, it is requested that all of the Examiner's rejections and objections be withdrawn and the application be passed to issue.

The Applicants hereby petition for an extension of time of one month under 37 C.F.R. 1.136. A check in the amount of \$120.00 is enclosed in payment of the extension fee.

If a telephone conference will assist in clarifying or expediting this Amendment, the Examiner is invited to contact the undersigned at the telephone number below.

Respectfully submitted,



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CERTIFICATE OF MAILING

I HEREBY CERTIFY that this Amendment is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 14th day of October, 2005.



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John L. DeAngelis